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predetermined information on the electronic writing surface in response to the detected motion corresponding to the first motion.--

REMARKS

The non-final Office Action mailed November 6, 2002 (paper no. 4) has been carefully reviewed, and the present remarks are responsive thereto. Claims 1-40 are now pending. By this Amendment, new claims 39 and 40 are added. Reconsideration is respectfully requested.

Objection to Figure 1

Figure 1 has been objected to for not including a designation such as "Prior Art." Attached hereto is Figure 1 amended in red ink to include such a designation. Also attached is a clean copy of Figure 1 as amended. It is therefore believed that the objection is overcome.

Art-Based Rejections

Claims 1-14, 16-33, and 35-38 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,817,034 to Hardin, Sr. et al. ("Hardin"). Dependent claims 15 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardin in view of U.S. Patent No. 6,307,956 to Black ("Black").

Claim 1 is directed to a method for detecting an in-air gesture. The method of claim 1 comprises step including, *inter alia*, determining whether a digitizing pen is in contact with a digitizing writing surface and whether the digitizing pen is in motion with respect to the digitizing writing surface. Consistent with claim 1, the specification defines an *in-air gesture* as

a certain prescribed movement made by a user of a pen or stylus that is proximate to, but not in contact with, a display screen of a computer that allows pen input. Specification, p. 3, lns. 13-15. Of course, digitizing writing surfaces other than a display screen may be used.

Hardin does not teach or suggest detecting an in-air gesture of any kind. Hardin is directed to a computerized handwriting duplication system that senses a pen/cursor proximate to or in contact with a digitizer pad. Hardin discloses sensing whether the cursor changes from being proximate to the digitizer pad to touching the pad by producing a “pen down” signal, and whether the cursor changes from touching the digitizer pad to being proximate to the pad by producing a “pen up” signal. Hardin, col. 10, lns. 57-68. The Office Action appears to regard such change in status of the cursor as an in-air gesture. However, both of these pen-up and pen-down state changes require that the cursor touch the digitizing pad at some time during the state change. Indeed, nowhere does Hardin disclose an in-air gesture that is truly “in-air.” At best, the sensing of a non-contacting but proximate cursor is merely used in a wait loop cycle until the cursor is placed in contact with the digitizer pad. *See* Hardin, Fig. 8A, the loop cycle defined by blocks 208, 212, 214, and 216.

In contrast, embodiments of the invention recited in claim 1 may utilize various in-air gestures that, by definition, do not involve the pen touching the digitizer pad during the gesture. For example, a user may move the pen in a “down spike” in-air gesture by holding the pen above a digitizing writing surface and moving the pen south (with respect to the north, south, east, and west directions of the digitizing writing surface) and then north back to the original position. Specification, p. 13, lns. 1-6.

The method for in-air gesture detection of claim 1 further includes recording positional information of the pen within a moving buffer. Hardin discloses recording the X-Y coordinates of the cursor into buffer memory 14 but does not teach or suggest that such information is recorded in a moving buffer.

Claim 1 further requires that the moving buffer record a predetermined amount of positional information spanning a predetermined amount of time while the digitizing pen is not in contact with the digitizing writing surface. Hardin operates very differently. Hardin begins to receive X-Y coordinates of the cursor (and signals the user with a tone, see step 206 of Figure 8A), and continues to collect data until the user happens to bring the cursor up and away from the proximity of the digitizer pad (see step 216 of Figure 8A). Hardin, col. 10, lns. 50-57 and col. 11, lns. 40-46. Hardin records an amount of information that depends entirely upon how long the user waits before removing the cursor from the digitizer pad. Thus, neither the amount of information, nor the span of time over which the information is recorded by Hardin, is predetermined.

Independent claim 20 is also allowable over Hardin for at least similar reasons as those set forth above with regard to claim 1, and further in view of the additional features recited therein.

Claims 2-19, which depend from claim 1, and claims 21-38, which depend from claim 20, are also allowable for at least those reasons set forth above with regard to their respective independent claims, and further in view of the additional features recited therein. For example, dependent claim 3 additionally recites that the predetermined in-air gesture is a spike motion.

Hardin detects only whether the cursor is touching or in proximity with the digitizer pad, but simply does not teach or suggest detecting an in-air spike motion, much less distinguishing a right spike motion (for example) as recited in claim 6.

As another example, dependent claim 8 additionally recites that the predetermined amount of positional information is about 200 points of coordinate information. The Office Action relies on Hardin at col. 10, lns. 50-55, to disclose this feature. However, this portion of Hardin merely discloses that the data rate (i.e., speed) is 200 points per second. By disclosing only the data rate, the amount of data collected still depends upon the amount of time that the data is collected. For instance, collecting data at a rate of 200 points per second for two seconds results in 400 points of collected data. There is simply no disclosure in Harding that the total amount of positional information gathered is about 200 points as recited in claim 8.

As yet another example, dependent claim 9 additionally recites that the predetermined amount of time that positional information is recorded in the moving buffer is about 1 second. Again, Harding discloses only that the data collection rate is 200 points per second. But there is no disclosure of how long the data is collected for. As discussed previously, the amount of time that data is collected is not predetermined and depends entirely upon how long the user waits before removing the cursor from the digitizer pad. Thus, Hardin fails to teach or suggest recording, for a predetermined amount time of about 1 second, positional information, as required by claim 9.

As yet another example, dependent claim 10 additionally recites that the step of determining whether positional information recorded in the moving buffer corresponds to a

predetermined in-air gesture is based on a detected motion shape. Hardin teaches no predetermined in-air gestures. Indeed, is it not even possible with Hardin to store predetermined in-air gestures or compare them with measured in-air gestures. Thus, Harding fails to teach or suggest this feature of claim 10.


New Claims 39 and 40

It is respectfully submitted that new claims 39 and 40 are allowable over the art of record. For instance, none of the art of record, taken individually or in any combination or subcombination, teaches or suggests detecting a motion of a stylus with respect to an electronic writing surface, the stylus not physically contacting the electronic writing surface during the motion, determining whether the motion of the stylus corresponds to a first motion from a plurality of predefined motions, and performing a function associated with the first motion in response to the motion of the stylus corresponding to the first motion.

Conclusion

All objections and rejections having been addressed, it is submitted that the present application is in condition for allowance, and a notice to that effect is respectfully requested. Should the Examiner feel that a telephone conference would expedite prosecution, she is invited to contact the undersigned at the number below.

Respectfully submitted,

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Date: February 5, 2003

MARKED-UP VERSION OF AMENDMENTS

IN THE SPECIFICATION:

Please amend the specification as follows:

Page 1, amend the sole paragraph on that page as follows:

The present application claims priority to provisional application Serial No. 60/247,972, entitled In Air Gestures for Electromagnetic Coordinate Digitizers, filed November 10, 2000, which is incorporated by reference herein. The present application is also related to provisional application Serial No. (Atty docket 3797.00066) 60/247,182, entitled Method and Apparatus For Improving the Appearance of Digitally Represented Handwriting; to provisional application Serial No. (Atty docket 3797.00067) 60/247,841, entitled Highlevel Active Pen Matrix; to provisional application Serial No. (Atty docket 3797.00069) 60/247,973, entitled Selection Handles in Editing Electronic Documents; to provisional application Serial No. (Atty docket 3797.00070) 60/247,842, entitled Insertion Point Bungee Space Tool; to provisional application Serial No. (Atty docket 3797.00072) 60/247,844, entitled Simulating Gestures of a Mouse Using a Stylus and Providing Feedback Thereto; to provisional application Serial No. (Atty docket 3797.00074) 60/247,400, entitled System and Method For Accepting Disparate Types Of User Input; to provisional application Serial No. (Atty docket 3797.00075), entitled In Air Gestures, and filed concurrently with the present

~~application;~~ to provisional application Serial No. (~~Atty docket 3797.00076~~) 60/247,831, entitled Mouse Input Panel Windows Class List; to provisional application Serial No. (~~Atty docket 3797.00077~~) 60/247,843, entitled Mouse Input Panel and User Interface; to provisional application Serial No. (~~Atty docket 3797.00079~~) 60/247,479, entitled System and Method For Inserting Implicit Page Breaks; each filed November 10, 2000, and each of which is incorporated by reference herein.

Page 2, amend the paragraph beginning at line 12, and continuing onto page 3, as follows:

In the situation when a conventional computer system has a digitizing writing pad and stylus, and a user would like to utilize the functionality that is associated with a mouse that is not available through the digitizing writing pad and stylus, the user must stop using the digitizing writing pad and ~~style~~ stylus and begin to use the mouse. For example, when a user would like to control the behavior of the computer system using the functionality provided by the left- and right-buttons of a two-button mouse, the user must stop using the digitizing writing pad and stylus and use the mouse, or using the stylus to select the desired function from a sequence of menu selections. A change from a stylus to a mouse is time consuming for the user because the user must refocus attention from one input device to another. Further, switching many times ~~switching~~ from one input device to another can be awkward or the computer system may be configured so

that a mouse-type input device is not connected. Selecting a desired function from a sequence of menu selection can be plainly inconvenient.



Approved ON
04/18/03

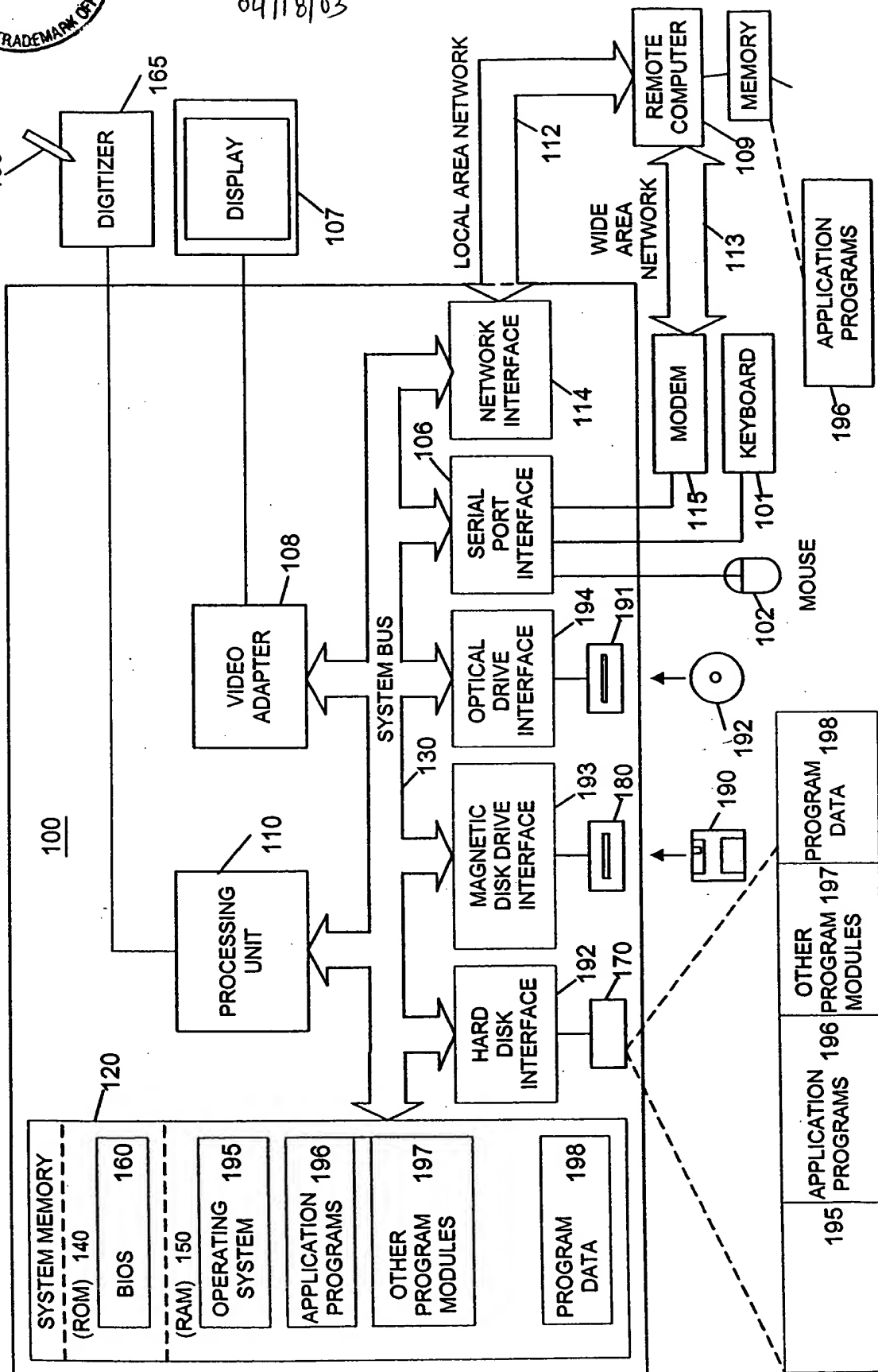


FIG. 1

PRIOR ART